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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,544	03/26/2004	Kazuhide Kanemura	Q80614	6128
23373 7590 09/26/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER WOLLSCHLAGER, JEFFREY MICHAEL	
			ART UNIT 1732	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/809,544

Applicant(s)

KANEMURA, KAZUHIDE

Examiner

Jeff Wollschlager

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2, 4-8 and 10-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-8 and 10-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 31, 2007 has been entered.

### ***Response to Amendment***

Applicant's amendment to the claims filed May 31, 2007 has been entered. Claim 1 is currently amended. Claims 1, 2, 4-8 and 10-18 are pending and under examination.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 4-8 and 10-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limiting effect of determining the criterion measure as it relates to maximum peeling force and using that value to set the amount of solvent in the film while it is being peeled is unclear. The examiner submits the lack of clarity appears to revolve around the fact that it seems at least two distinct and different steps are recited together in the limitation such that the limiting effect is unclear.

For example, the limitation states the remaining solvent is determine as a criterion value when the peeling force is at a maximum. Then the claim recites the remaining solvent, for

Art Unit: 1732

example, is less than that the remaining solvent (by at least 5%) level while it is being peeled. It is unclear how the remaining solvent during peel is less than the remaining solvent when the peel force is at a maximum. The maximum peel force will be applied sometime during the peeling step and as such, the remaining solvent will be at the criterion level during the peel step.

Said differently, it appears the criterion determination step is a calibration/control type step, which is performed distinctly, separately, and before the actual peeling step employed to produce the final product film. The criterion appears intended to provide an input value to the process prior to the actual peeling step. However, the limiting effect of this recitation is unclear as currently presented in the claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-8 and 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. (US 2001/0009312) in view of Shibue et al. (US 6,503,581).

Regarding claim 1, Takeda teaches a solution casting method for producing a polymer film from a dope solution containing a polymer and a solvent (abstract) comprising the steps: casting the dope solution from a casting die on a substrate/metal belt to form a gel-like film (paragraph [0083]; and Figure 1, elements (1), (2), (3)), drawing the film in a tangential direction of the substrate/metal belt to peel the film from the substrate at a speed of at least 10 m/min (paragraph [0083]; Figure 1, elements (4), (2')); Figure 2, note element 2' relative to elements (3) and (34); and paragraph [0016], teaching a speed of 40 m/min to 120 m/min), regulating to less

Art Unit: 1732

than 20 mm a movement in which a peeling position of the film moves on the substrate (paragraphs [0026], [0027], [0042], [0092], [0104-0105] and [0113]), and drying the peeled gel to obtain the polymer film (paragraph [0083]) wherein a peeling roller is used for peeling said gel-like film (Figure 1, elements (4)).

Takeda teaches that the quality of the produced film is better when the fluctuation, relative to the peeling point, is less than 20 mm (paragraphs [0104,0105, 0113]. Takeda additionally teaches that the peeling roll is adjusted in a vertical direction (see Figure 7, element (44), for example) to produce a high quality film by maintaining a constant angle formed by the web with the metal support (paragraph [0026]).

Further, Takeda teaches that the amount of solvent remaining in the film when the peeling force is applied to remove the film from the substrate/metal belt impacts the quality of the film produced. Takeda also teaches there are discrete ranges of solvent levels where the quality of the film is different (see paragraphs [0004], [0092]) showing that good results are achieved at solvent levels of less than 40% (paragraph [0004]) and between 70-120% (paragraph [0072]).

Additionally, Shibue et al. teach a method of producing an optical film wherein fatty acid cellulose ester films, for example, having an acetyl group and a propionyl group are employed to produce a film having a desired retardation value (col. 3, lines 61-67). Broadly, Shibue et al. disclose residual solvent levels between 5 and 100 percent during peeling (col. 4, lines 34-38), with a more preferable range of 10 to 45 percent (col. 15, lines 50-col. 16, lines 3). Further, Shibue et al. disclose a preferable solvent range of 5 to 10 percent for peeling fatty acid cellulose ester films (col. 5, lines 36-40). Furthermore, Shibue et al. disclose that the remaining amount of solvent at peel is a result effective variable that impacts wrinkles, casting speed, and other variables (col. 14, lines 32-57) and that the amount of solvent is determined so that

Art Unit: 1732

productivity and quality are balanced. Even further, Shibue et al. exemplify peeling the film at a residual solvent level of 25% and a tension of 150 N/m (Example 1; also see Table 2; Example 4 and Table 5).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed the solvent levels disclosed by Shibue et al. to produce a specific film (e.g. optical film of cellulose ester film) by the method disclosed by Takada et al. (e.g. conventional solution casting with teaching directed to controlled movement of the film at peeling) for the purpose of producing a high-quality wrinkle (Shibue: col. 14, lines 53-57; Takada et al. paragraphs [0104-0113]) free film having a wide range of commercial applications (e.g. optical film for a liquid crystal display).

As to claim 2, Takeda teaches that the peeling roll is adjusted to maintain a constant angle formed by the web with the substrate/metal belt (paragraph [0026]). In view of the teaching of Takeda to constantly maintain the angle, it is understood that constantly means the angle is being controlled, which means the angle is moving, at least four times in one second. Further, the examiner notes that claim 2 does not appear to include a manipulative step.

As to claim 4, Takeda teaches that the film contacts the peeling roller just after the peeling off of the film from the substrate/metal belt (paragraph [0012]). Additionally, Takeda teaches the web contacts the roll within 5 seconds, more preferably within 3 seconds after being peeled from the substrate/metal belt [paragraph [0076]]. Further, Takada teaches movement of the adjustable peeling roll, on the order of magnitude of 100 mm (paragraph [0127]). At speeds of 40 m/min – 120 m/min, the calculated length of the internal common tangent of the peeling roller and the substrate/metal belt ranges from 0 mm – 10,000 mm. Takada's teaching clearly is toward the low end of the range. One having ordinary skill would have been motivated at the

Art Unit: 1732

time of the invention to minimize the amount of time the film were unsupported to prevent excessive sag, film breakage and to provide the film with good support (paragraph [0005]).

As to claim 5, Takeda teaches the substrate is adjusted in the range of 10 °C to 40 °C (paragraph [0074], teaches a range of 0 °C to 50 °C, and [0101], provides an example at 10 °C).

As to claim 6, Takada teaches a preferable peeling speed of up to 120 m/min (paragraph [0016]). The claimed range is 0 – 150 m/min. Takeda teaches a speed within the claimed range.

As to claim 7, Shibue et al. exemplify a drying time on the belt of two minutes (Example 1).

As to claim 8, Takeda teaches the substrate/belt temperature is in the range from 0 °C to 50 °C. This would implicitly heat the film to a temperature within the claimed range. As such, the claimed range and the range of the prior art overlap. Further, Shibue et al. disclose temperatures within the claimed range (Example 1).

As to claims 10 –12, Takeda teaches that the amount of solvent remaining in the film when the peeling force is applied to remove the film from the substrate/metal belt impacts the quality of the film produced. Takada also teaches there are discrete ranges of solvent levels where the quality of the film is different (see paragraphs [0004], [0092]). Takeda does not expressly specify specific solvent criterion relative to a film thickness of 60 micrometers.

However, Shibue et al. disclose films having a thickness of between 40 and 190 um (col. 8, lines 42-47) and further disclose that the amount of residual solvent is determined so that productivity and quality are balanced (col. 14, lines 32-57).

Therefore, the level of solvent in the film at the time of peeling films is a recognized result effective variable in the art of solution casting films. So, one of ordinary skill would have had to take the level of solvent remaining in the film at the time the peeling force was applied in

Art Unit: 1732

to account to produce a film of adequate quality. The level of solvent would have been readily optimized as is routinely performed in the art.

As to claim 13, Takeda teaches that the film contacts the peeling roller just after the peeling off of the film from the substrate/metal belt (paragraph [0012]).

As to claim 14, Shibue et al. employ plasticizers (col. 10, lines 30-41). The examiner notes that employment of release agents is conventional in the art.

As to claims 15 and 16, Takeda teaches the solvent is a mixture containing dichloromethane/methylene chloride and alcohol/ethanol and that the alcohol/ethanol is at more than 8 wt. % (paragraph [0101]). Takeda also teaches that the alcohol has from 1 to 4 carbon atoms (paragraph [0082]).

As to claim 17, Shibue et al. employ fatty acid esters (Abstract).

As to claim 18, Takada teaches the polymer is cellulose acylate (paragraph [0007]).

### ***Response to Arguments***

Applicant's arguments filed May 31, 2007 have been considered but are moot in view of the new grounds of rejection. However, it is noted that the examiner does not agree with the characterization that Takada et al. teach away from using less than 50% residual solvent in a general sense. While the examiner agrees that Takada et al. disclose that a residual solvent level of 70-120% allows production at peeling speeds greater than 40 m/min for the particular film being produced, the examiner submits that the clear suggestion in Takada et al. is that it is conventional in the art to produce films at speeds less than 40 m/min having a residual solvent level of less than 40% at peeling. Furthermore, the examiner notes that the instant claims only require a production speed of at least 10 m/min. Further still, Takada et al.'s pertinent teaching

Art Unit: 1732

regarding the positive impact of reducing fluctuation/movement at peeling would be of interest to the artisan over a broad range of residual solvent levels and peeling speeds.

Accordingly, the examiner submits that while Takada et al. do provide somewhat disparaging remarks for residual solvent levels greater than 40% to 70% at peeling speeds greater than 40 m/min for their particular film, Takada et al. do not teach away from using less than 50% residual solvent as suggested in the REMARKS.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1732

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW

Jeff Wollschlager  
Examiner  
Art Unit 1732

September 17, 2007

cf  
CHRISTINA JOHNSON  
SUPERVISORY PATENT EXAMINER